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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/062,062	01/31/2002	James G. Bledsoe	25174A	2671

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OWENS CORNING  
2790 COLUMBUS ROAD  
GRANVILLE, OH 43023

EXAMINER

STACOVICI, STEFAN

ART UNIT PAPER NUMBER

1732

DATE MAILED: 09/08/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

*He*

**Office Action Summary**

Application No.

10/062,062

Applicant(s)

BLED SOE ET AL.

Examiner

Stefan Staicovici

Art Unit

1732

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 12 August 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-12 and 34-44 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 9-10, 42 is/are allowed.
- 6) ☒ Claim(s) 1-8, 11-12, 34-41 and 43-44 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on August 12, 2005 has been entered.

### ***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 34-41 and 43-44 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter that was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

In claim 34, the newly added limitation of evacuating substantially all air trapped between...the resin and the reinforcement panel through the perforations "without the use of heat" does not appear to have support in the original disclosure. Although the original disclosure does not describe evacuating substantially all air trapped between...the resin and the

reinforcement panel through the perforations "without the use of heat," the original disclosure does not explicitly exclude the use of heat.

Claims 35-41 and 43-44 are rejected as dependent claims.

***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1, 3, 34 and 38 are rejected under 35 U.S.C. 102(b) as being anticipated by Oka (US Patent No. 5,446,250).

Oka ('250) teaches the claimed process of making a composite sheet including, providing as mold surface, laminating (applying) a gel coat layer (15) (at least one outer coat of material) onto said mold surface, applying a sheet of fiberglass onto said gel coat, applying a resin to impregnate said fiberglass sheet and form plate (12), adding a plurality of said resin impregnated fiberglass sheets, removing air bubbles between said resin impregnated fiberglass sheets, applying a perforated layer (13) (reinforcement panel) having a plurality of holes (16) therethrough, applying a restraining plate (14) (polymer layer) and applying pressure to force an adhesive (resin) through said holes (16) and thereby bonding all layers together (see col. 3, line 48 through col. 4, line 10 and Figure 1). It submitted that said perforated layer (13) is obtained

by drilling holes into said layer. Furthermore, Oka ('250) teaches that the bonding adhesive (resin) is effective at 20 °C, hence at room temperature. As such, it is submitted that bonding occurs without the use of heat.

***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 2 and 35-37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Oka (US Patent No. 5,446,250) in view of Weinstein *et al.* (US Patent No. 4,082,882).

Oka ('250) teaches the basic claimed process as described above.

Regarding claim 35, although Oka ('250) teaches removing air bubbles between said resin impregnated fiberglass sheets, Oka ('250) does not teach the use of vacuum. However, the use of vacuum to remove air bubbles between a plurality of layers being laminated is well known as evidenced by Weinstein *et al.* ('882) who teach the use of vacuum to bond the plurality of layers under heat and pressure (col. 3, lines 36-56) and remove air bubbles. It is submitted that air is evacuated through said holes in the process of Oka ('250) in view of Weinstein *et al.* ('882) because in a vacuum forming process the air that is removed follows the path of least resistance, which in this case is represented by the holes in the reinforcing panel. Therefore, it would have been obvious for one of ordinary skill to have used a vacuum as taught by Weinstein *et al.* ('882)

to bond the layers in the process of Oka ('250) due to a variety of advantages that vacuum processing provides such as, reduced porosity and increased strength, hence providing for an improved product.

In regard to claims 36, Oka ('250) teaches applying pressure to force an adhesive (resin) through holes (16) and thereby bonding all layers together (see col. 3, line 48 through col. 4, line 10 and Figure 1).

Specifically regarding claim 37, Oka ('250) teaches laminating an additional gel coating to restraining plate (14) (see col. 3, lines 20-23).

8. Claims 4-6, 8, 39-40 and 44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Oka (US Patent No. 5,446,250) in view of JP 62-064527.

Oka ('250) teaches the basic claimed process as described above.

Regarding claims 4-6, 39-40 and 44, Oka ('250) does not teach tapered holes and the size of said holes. JP 62-064527 teaches bonding of a synthetic material (1) and a different material (2) that is perforated with a plurality of tapered holes (3), said holes having the smaller diameter (2-5 mm) (0.07-0.196 inches) facing said synthetic material (1) (first side of the reinforcement panel), and forcing said synthetic material (1) through said holes (3) to bond said synthetic material (1) and said different material (2) into a laminate (see Abstract and the Figures). Further, Oka ('250) teaches that said holes (16) have a diameter ranging of about 5 mm (see col. 3, lines 45-50). Therefore, it would have been obvious for one of ordinary skill in the art to have provided a plurality of tapered holes, said holes having the smaller diameter (2-5 mm) (0.07-0.196 inches) facing the reinforcing sheet, as taught by JP 62-064527 in the reinforcement panel

in the process of Oka ('250) because, JP 62-064527 teaches that tapered holes are needed to allow the molten material to flow through said holes and also teaches that the size is directly dependent on the desired bond strength, hence teaching that the hole size is a result-effective variable.

In regard to claim 8, Oka ('250) teaches laminating an additional gel coating to restraining plate (14) (see col. 3, lines 20-23) that provides for improved aesthetics. Hence, it is submitted that sink marks do not exist on said panel of Oka ('250) in view of JP 62-064527 in order for it to function as described by maintaining its aesthetic appearance.

9. Claims 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Oka (US Patent No. 5,446,250) in view of Tellman *et al.* (US Patent No. 4,655,869).

Oka ('250) teaches the basic claimed process as described above.

Regarding claim 7, Oka ('250) does not teach perforating using at least one roller having a plurality of pins. However, the use of rollers with perforating pins is well known in the art as evidenced by Tellman *et al.* ('869) who teach perforating a veneer sheet using at least one roller (32) having perforating pins (36) (see Figure 2). Therefore, it would have been obvious for one of ordinary skill in the art to have used a roller with perforating pins as taught by Tellman *et al.* ('869) to form holes in the reinforcing panel obtained by the process of Oka ('250) because, Tellman *et al.* ('869) teach an efficient process of forming holes, whereas the teachings Oka ('250) require a process of making holes in a layer in order to function as described, hence showing a desirability for the teachings of Tellman *et al.* ('869).

10. Claim 41 is rejected under 35 U.S.C. 103(a) as being unpatentable over Oka (US Patent No. 5,446,250) in view of JP 62-064527 and in further view of Tellman *et al.* (US Patent No. 4,655,869).

Oka ('250) in view of JP 62-064527 teaches the basic claimed process as described above.

Regarding claim 7, Oka ('250) in view of JP 62-064527 does not teach perforating using at least one roller having a plurality of pins. However, the use of rollers with perforating pins is well known in the art as evidenced by Tellman *et al.* ('869) who teach perforating a veneer sheet using at least one roller (32) having perforating pins (36) (see Figure 2). Therefore, it would have been obvious for one of ordinary skill in the art to have used a roller with perforating pins as taught by Tellman *et al.* ('869) to form holes in the reinforcing panel obtained by the process of Oka ('250) in view of JP 62-064527 because, Tellman *et al.* ('869) teach an efficient process of forming holes, whereas the teachings Oka ('250) in view of JP 62-064527 require a process of making holes in a layer in order to function as described, hence showing a desirability for the teachings of Tellman *et al.* ('869).

11. Claims 11-12 and 43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Oka (US Patent No. 5,446,250) in view of Sharp (US Patent No. 5,054,645).

Oka ('250) teaches the basic claimed process as described above.

Regarding claims 11-12 and 43, Oka ('250) does not teach a plurality of tapered holes having a density from about 4-49 holes per square foot of reinforcement panel. Sharp ('645) teaches bonding a separating material (16) having a plurality of holes therein with a fiber



reinforced layer (17). Further, Sharp ('645) teaches that the plurality of holes have density of 20-350 per square foot of separating material (see col. 3, line 48 through col. 4, line 5). Furthermore, it is noted that for a specific surface, the hole density is dependent on the size of the holes. Therefore, it would have been obvious for one of ordinary skill in the art to have provided a plurality of holes having a density of 20-350 per square foot as taught by Sharp ('645) in the reinforcement panel in the process of Oka ('250) because, Sharp ('645) teaches that such hole density provides for improved bonding and also because, the hole density is dependent on the size of the holes, hence the hole density is a result-effective variable.

***Allowable Subject Matter***

12. Claims 9-10 and 42 are allowed.
13. The following is an examiner's statement of reasons for allowance: the prior art does not teach or suggest a process for manufacturing a composite sheet including, applying at least one outer coat of material onto a mold surface, applying at least one coat of resin and reinforcement material over the outer coat to form a reinforcement layer, applying a perforated reinforcement panel to the reinforcement layer, forcing the resin into the perforations formed in the reinforcement panel, thereby bonding the reinforcement layer and the reinforcement panel, wherein the perforating step is accomplished by moving the reinforcement panel through three sets of opposed pinch-rollers, one roller of a middle set of the three sets being a perforating mandrel having a plurality of perforating pins.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

### *Response to Arguments*

14. Applicant's arguments have been considered but are moot in view of the new ground(s) of rejection.

### *Conclusion*

15. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

16. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stefan Staicovici, Ph.D. whose telephone number is (571) 272-1208. The examiner can normally be reached on Monday-Friday 9:30 AM to 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael P. Colaianni, can be reached on (571) 272-1196. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

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applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Stefan Staicovici, PhD

A handwritten signature in black ink, appearing to read 'Stefan Staicovici', followed by the date '9/1/05'.

Primary Examiner

AU 1732

September 1, 2005